

METHOD AND APPARATUS FOR CHEMICAL-MECHANICAL  
PLANARIZATION OF MICROELECTRONIC SUBSTRATES  
WITH A CARRIER AND MEMBRANE

ABSTRACT OF THE DISCLOSURE

A method and apparatus for planarizing a microelectronic substrate. In one embodiment, the apparatus can include a membrane formed from a compressible, flexible material, such as neoprene or silicone, and having a first portion with a thickness greater than that of a second portion. The membrane can be aligned with the microelectronic substrate to bias the microelectronic substrate against a planarizing medium such that the first portion of the membrane biases the microelectronic substrate with a greater downward force than does the second portion of the membrane. Accordingly, the membrane can compensate for effects, such as varying linear velocities across the face of the substrate that would otherwise cause the substrate to planarize in a non-uniform fashion or, alternatively, the membrane can be used to selectively planarize portions of the microelectronic substrate at varying rates.